APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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SQUIRE, SANDERS & DEMPSEY L.L.P.
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EXAMINER
JUNTIMA, NITTAYA

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/748,223	HOU, CHENG-LIANG
	Examiner	Art Unit
	NITTAYA JUNTIMA	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 January 2008</u>.
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-19</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-19</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>31 December 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
        1.☐ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the amendment filed on 1/24/2008.

2.   Claims 1-19 are currently rejected under 35 U.S.C. 103(a).

3.   Claims 1-6, 9-16, and 19 are currently rejected under 35 U.S.C. 102(e).

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

5.   Claims 1-6, 9-16, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by

Buskirk (US 2006/0159019 A1).

Regarding claims 1, 10, and 11, Buskirk teaches a method, comprising:

Setting a plurality of packet type filters so that each of said packet type filters performs

filtering for a different packet type (a classifier 402 in Fig. 4, paragraphs 0030-0031, 0055 and

0058 and claim 104).

Incrementing a plurality of buckets, each bucket communicatively coupled to a packet

type filter of the plurality of filters (policing engine 700 in Fig. 7 having leaky buckets for

corresponding flows, paragraphs 0070-0075 and claim 104).

Receiving a packet having a packet type (ingress processing system 400 in Fig. 4 receiving a packet belonging to a flow with a particular protocol, paragraphs 0051, 0058, 0074 and Fig. 8 and claim 104).

Measuring the bucket that is coupled to the packet type filter that filters for the receive packet type (a packet handling engine reads on processor 724 in the policing engine 700,Fig. 7 and the traffic shaper, collectively; processor 724 measures the flows, paragraphs 0070, 0074, 0078, and Fig. 8 and claim 104).

Transmitting the packet if its measured bucket is above a threshold value (a packet handling engine reads on processor 724 in the policing engine 700,Fig. 7 and the traffic shaper, collectively; the traffic shaper forward conforming packet, paragraphs 0070, 0074, 0076-0078, and Fig. 8 and claim 104).

Regarding claims 2 and 12, Buskirk teaches dropping the packet if the measure bucket is below a threshold value (the traffic shaper drops nonconforming packet, steps 808 and 810 in Fig. 8, paragraphs 0072, 0076-0078 and claim 105).

Regarding claims 3 and 13, Buskirk teaches decrementing the measured bucket if the packet is transmitted (paragraphs 0079-0081, Fig. 9 and claim 106).

Regarding claims 4 and 14, Buskirk teaches decrementing decrements the measured bucket by a length of the transmitted packet (paragraphs 0075 and 0081, and claim 108).

Regarding claims 5 and 15, Buskirk also teaches that the decrementing decrements the measured bucket by a token (current tokens are subtracted by "fare" tokens being charged for packet admission, Fig. 11b and paragraphs 0090, and 0098-0099).

Regarding claims 6 and 16, Buskirk also teaches that the buckets are each incremented at different rates (paragraphs 0078, 0080-0081 and claim 110).

Regarding claims 9 and 19, Buskirk also teaches a first packet type includes packets having a first QOS level and a second packet type includes packets having a second QOS level (paragraphs 0058 and 0078 and claim 113).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 7-8 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buskirk (US 2006/0159019 A1).

Regarding claims 7 and 17, Buskirk fails to explicitly teach that a maximum value for each bucket is different.

However, Buskirk teaches that each flow has different QoS level (paragraph 0058). An official notice is taken that it is well known in the art to apply a different maximum value to each buffer or queue in order to provide different QoS levels (such delays and processing time) to a plurality of buffers/queues.

Therefore, it would have been obvious to one skilled in the art at the time of the invention to further modify the teaching of Buskirk by applying a different maximum value to each bucket in order to provide different QoS levels (such delays and processing time) to a plurality of buckets.

Regarding claims 8 and 18, although Buskirk teaches that a first packet type is FAST packet and a second packet type is IP (paragraph 0058) and other types of protocols can be applied (paragraph 0077), Buskirk does not explicitly teach that the first packet type includes unicast and the second packet type includes multicast and broadcast.

However, an official notice is taken that it is well known in the art that there are two main types of communication, i.e., point-to-point which includes unicast and point-to-multipoint which includes multicast and broadcast.

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify the teaching of Buskirk such that the first packet type would include unicast and the second packet type would include multicast and broadcast in order to enable both point-to-point

and point-to-multipoint packets to be classified, stored, and serviced separately according to their type of communication.

8.   Claims 1-3, 6-13, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weberhofer (US 6,014,384) in view of the admitted prior art (the specification, paragraph 0003).

Regarding claims 1, 10, and 11, as shown in Fig. 2, Weberhofer teaches a system, comprising:

A packet receiving engine (a data input point 16), for receiving packets of at least a first type and a second type (a first and second types read on a number of QoS classes such as CBR and UBR). See col. 4, lines 10-33, 37-45.

A plurality of buckets (a number of leaky-bucket systems, each bucket per QoS class), each communicatively coupled to the packet receiving engine (a number of leaky-bucket systems are connected to a data input point 16 via an access port), each communicatively coupled to a packet type filter of plurality of packet type filters (a mapper 18 and queues 19.1-19.4, collectively, constitute a plurality of packet type filters because cells with different QoS are classified into corresponding queues, which means the mapper 18 must have a plurality of different means/elements for classifying the received cells, and that each means/element, whether it is hardware or software, is dedicated to identifying a corresponding one of the QoS classes and assign it to an ATM cell), each packet type filter is set to filter at least one packet type. See col. 4, lines 45-53, 65-col. 5, lines 1-10, 17-26.

A bucket updating engine (counters for the leaky-bucket systems for QoS classes, collectively), communicatively coupled to the packet receiving engine (a data input point 16), for incrementing a first bucket and a second bucket. See col. 5, lines 17-22.

In addition, Weberhofer teaches that each packet type filter filters the type of packet received (a mapper 18 and queues 19.1-19.4, collectively, determine and assign the QoS class for each received ATM cell and store each assigned QoS ATM cell in a corresponding QoS queue).

However, Weberhofer fails to explicitly teach a packet handling engine, communicatively coupled to the packet receiving engine, for measuring the bucket coupled to the packet type filter that filters for the type of packet received and for transmitting the received packet if the measured bucket is above a threshold value as recited in the claim.

The admitted prior art teaches a leaky bucket in which if the bucket level is above a threshold level, a packet would be transmitted and the bucket would be decremented, therefore, it is inherent that a packet handling engine for measuring the bucket and for transmitting a received packet if the measured bucket is above a threshold value must be included. See the specification, paragraph 0003.

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify the teaching of Weberhofer to include a packet handling engine for measuring a bucket and for transmitting a received packet if the measured bucket is above a threshold value of the admitted prior art such that the packet handling engine, communicatively coupled to the

packet receiving engine, for measuring the bucket coupled to the packet type filter that filters for

the type of packet received and for transmitting the received packet if the measured bucket is

above a threshold value would be included as recited in the claim. The suggestion/motivation to

do so would have been to perform a flow control on packet transmission for each bucket.

Regarding claims 2 and 12, Weberhofer does not teach that the packet handling engine is

for dropping the packet if its measure bucket is below a threshold value.

However, the admitted prior art teaches dropping a packet if the bucket level falls below

a threshold value (the specification, paragraph 0003).

Given the teaching of the admitted prior art, it would have been obvious to one skilled in

the art at the time of the invention to modify the teaching of Weberhofer such that the packet

handling engine would drop the packet if its measure bucket is below a threshold value as recited

in the claim. The suggestion/motivation to do so would have been to provide a corrective

action/flow control when a high usage/congestion level occurs.

Regarding claims 3 and 13, although Weberhofer teaches the bucket updating engine

(counters for the leaky-bucket systems for QoS classes, collectively, see col. 5, lines 17-22),

Weberhofer does not teach that the bucket updating engine is for decrementing the measured

bucket if the packet is transmitted.

However, the admitted prior art teaches decrementing the measured bucket if the packet is transmitted (the specification, paragraph 0003).

Given the teaching of the admitted prior art, it would have been obvious to one skilled in the art at the time of the invention to modify the teaching of Weberhofer such that the bucket updating engine would decrement the measured bucket if the packet is transmitted. The suggestion/motivation to do so would have been to reflect the current bucket level following a packet transmission.

Regarding claims 6 and 16, because Weberhofer teaches that high-level QoS classes can be granted an absolute priority over those of lesser value (col. 2, lines 31-46), therefore, it is inherent that the bucket updating engine must increments each bucket at different rates.

Regarding claims 7 and 17, the combined teaching of Weberhofer and the admitted prior art does not explicitly teach that a maximum value for each bucket is different. However, it would have been obvious to one skilled in the art at the time of the invention to modify the combined teaching of Weberhofer and the admitted prior art such that a maximum value for each bucket would be different. The motivation/suggestion to do so would have been to provide different bucket maximum level/capacity to each bucket according to its QoS level and such modification of varying the maximum value of each bucket involves only routine skill in the art.

Regarding claims 8 and 18, although Weberhofer teaches that the first packet type is CBR and the second packet type is UBR, the combined teaching of Weberhofer and the admitted prior art does not explicitly teach that the first packet type includes unicast and the second packet type includes multicast and broadcast.

However, an official notice is taken that it is well known in the art that there are two main types of communication, i.e., point-to-point which includes unicast and point-to-multipoint which includes multicast and broadcast, and that CBR may include unicast cells and that UBR may include multicast and broadcast cells.

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify the combined teaching of Weberhofer and the admitted prior art such that the first packet type would include unicast and the second packet type would include multicast and broadcast in order to enable both point-to-point and point-to-multipoint packets to be classified, stored, and serviced separately according to their type of communication.

Regarding claims 9 and 19, Weberhofer teaches that the first packet type includes packets having a first QoS level (CBR) and the second packet type includes packets having a second QoS level (UBR). See col. 4, lines 10-33 and col. 5, lines 46-51.

9.   Claims 4-5 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Weberhofer (US 6,014,384) in view of the admitted prior art (the specification, paragraph 0003),

and further in view of Zhang (US 7,130,917 B2).

        Regarding claims 4-5 and 14-15, the combined teaching of Weberhofer and the admitted

prior art does not teach that the bucket updating engine decrements the measured bucket by a

length of the transmitted packet/a token.

        However, Zhang teaches decrementing a measure bucket by a length of the transmitted

packet/a token (the packet is transmitted if the token bucket has enough tokens, ($>=$ L) and the

number of tokens in the bucket will be updated accordingly, i.e., update token bucket: token# =

token# - L, col. 4, lines 38-55, therefore, L, which is the packet length, must include one token).

        Given the teaching of Zhang, it would have been obvious to one skilled in the art at the

time of the invention to modify the combined teaching of Weberhofer and the admitted prior art

such that the bucket updating engine would decrement the measured bucket by a length of the

transmitted packet/a token as recited in the claims. The suggestion/motivation to do so would

have been to update the current bucket level after packet transmission as taught by Zhang (col. 4,

lines 38-43).

Response to Arguments

10.   Applicant's arguments filed 1/24/2008 have been fully considered but they are not

persuasive.

A.   In the remarks regarding claims 1, 10, and 11, the Applicant argues that the mapper 18 of

Weberhofer, which is a single unit which reads the header information of ATM cells input from

data input point 16 to determine the priority level of the ATM cell and forwards the ATM cell to

priority queues 19.1-19.4, is not a plurality of different packet type filters in which each of the

packet type filters performs filtering for a different packet type as claimed.

        In response, the Examiner respectfully disagrees. Fig. 2 of Weberhofer clearly shows

different branches are connected from mapper 18 to queues 19.1-19.4 and Weberhofer further

teaches that "*The ATM cells to be transmitted are first <u>identified using a mapper 18</u>. <u>This</u>

<u>mapper determines which QoS class a cell belongs to, and directs it to the proper queue 19.1</u>

<u>through 19.4</u>. ATM cells of higher transmission priority are thus separated from those of lower

transmission priority*" (emphasis added, col. 4, lines 45-50).

        Therefore, since different ATM cells are classified into different QoS classes by the

mapper 18 (col. 4, lines 11-33 and col. 5, lines 3-10) and input into corresponding QoS queues,

the mapper must have a number of different means/elements that classify/identify different QoS

classes and that each means/element, whether it is hardware or software, must be dedicated to

identifying one of the QoS classes and assigning it to an ATM cell. For example, assuming

queue 19.1 is assigned to a CBR QoS class and queue 19.2 is assigned to a UBR QoS class.

There must be CBR means within the mapper 18 that is responsible for identifying which cells

belong to a CBR class and forwarding them to the queue 19.1 and the UBR means also within

the mapper 18 that is responsible for identifying which cells belong to the UBR class and

forwarding them to queue 19.2 in order for the CBR cells and UBR cells to be classified

properly.

Thus, the mapper 18 and queues 19.1-19.4 constitute a plurality of packet type filters in

which each of the packet type filters performs filtering for a different packet type as claimed.

Thus, the rejection is maintained.

Conclusion

11.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to NITTAYA JUNTIMA whose telephone number is (571) 272-

3120. The examiner can normally be reached on Monday through Friday, 8:00 A.M - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Firmin Backer can be reached on 571-272-6703. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NJ/
Examiner, Art Unit 2616
4/25/2008

/FIRMIN BACKER/

Supervisory Patent Examiner, Art Unit 2616